

*Amendments to the Claims*

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently Amended) A circuit which decouples gains for a transmit signal and a receive signal of a broadband modem that is coupled to a telephone line and which isolates narrowband voice signals from broadband signals, comprising:

a multi-port transformer including

- i) a line coil electrically coupled to the telephone line, wherein said line coil includes a first line coil, a line capacitor and a second line coil;
- ii) a linedriver coil electrically coupled to a broadband modem transmit line carrying the transmit signal of the broadband modem, wherein said linedriver coil includes a first linedriver coil, a linedriver capacitor and a second linedriver coil;
- iii) a receive coil electrically coupled to a broadband modem receive line carrying the receive signal of the broadband modem, wherein said receive coil includes a first receive coil and a second receive coil, wherein a node between the first receive coil and the second receive coil is coupled to ground;
- iv) wherein said line coil, said linedriver coil and said receive coil are magnetically coupled to each other;

a bridge circuit electrically coupled between said multi-port transformer and the broadband modem receive line; and

a pair of line matching resistors electrically coupled between said multi-port transformer and the broadband modem transmit line, wherein each of the line matching resistors match the telephone line resistance.

2. (currently amended) A circuit of claim 1, wherein a turns ratio of said linedriver coil to said line coil is 1:N and a turns ratio of said receive coil to said line coil is M:N, wherein M and N refer to integers.
3. (original) A circuit of claim 1, wherein said bridge circuit is coupled to the broadband modem transmit line and subtracts the transmit signal from the receive signal.
4. (original) A circuit of claim 1, wherein the broadband modem is an ADSL modem.
5. (original) A circuit of claim 1, wherein the broadband modem is a VDSL modem.
6. (original) A circuit of claim 1, wherein the broadband modem is a HDSL modem.
7. (Canceled)
8. (Currently Amended) A broadband modem for coupling a broadband signal to a telephone line, comprising:
  - a transmit circuit that provides a modem transmit signal;
  - a receive circuit that receives a modem receive signal;
  - a hybrid circuit coupled to said transmit circuit and said receive circuit which decouples gains for the modem transmit signal and the modem receive signal [[.]] and which isolates narrowband voice signals from broadband signals, wherein said hybrid circuit comprises:

a multi-port transformer including

- i) a line coil electrically coupled to the telephone line, wherein said line coil includes a first line coil, a line capacitor and a second line coil;
- ii) a linedriver electrically coupled to a broadband modem transmit line carrying a transmit signal of said transmit circuit, wherein said linedriver coil includes a first linedriver coil, a linedriver capacitor and a second linedriver coil;
- iii) a receive coil electrically coupled to said receive circuit carrying a receive signal of the receive circuit, wherein said receive coil includes a first receive coil and a second receive coil, wherein a node between the first receive coil and the second receive coil is coupled to ground;
- iv) wherein said line coil, said linedriver coil and said receive coil are magnetically coupled to each other;

a bridge circuit electrically coupled between said multi-port transformer and said receive circuit; and

a pair of line matching resistors electrically coupled between said multi-port transformer and said transmit circuit, wherein each of the line matching resistors match the telephone line resistance.

9. (Canceled)

10. (Currently Amended) A broadband modem of claim 8, [[9]], wherein within said hybrid circuit a turns ratio of said linedriver coil to said line coil is 1:N and a

turns ratio of said receive coil to said line coil is  $M:N$ , wherein  $M$  and  $N$  refer to integers.

11. (original) A broadband modem of claim 8, wherein the broadband signal is an ADSL signal.
12. (original) A broadband modem of claim 8, wherein the broadband signal is a VDSL signal.
13. (original) A broadband modem of claim 8, wherein the broadband signal is a HDSL signal